



County of Los Angeles - Department of Public Works

Building and Safety/Land Development Division

LOW IMPACT DEVELOPMENT REVIEW SHEET

**(2014 Los Angeles County Building Code, Residential Code,
and Green Building Standards Code)**

GENERAL PROJECT INFORMATION

PLAN CHECK: 0 DISTRICT No: 0.00
JOB ADDRESS: 0 CITY: 0.00
APPLICANT: 0 EMAIL: 0

Your application for a permit, together with plans and specifications, has been examined and you are advised that the issuance of a permit is withheld for the reasons hereinafter set forth. The approval of plans and specifications does not permit the violation of any section of the Building Code, or other local ordinance or state law.

NOTE: Numbers in the parenthesis () refer to sections of the 2014 edition of County of Los Angeles Building Code, Appendix J of the LACBC (J), Residential Code (R), Green Building (GB), Table (T), and Building Code Manual (BCM).

INSTRUCTIONS

- Corrections shown below apply to this plan check. See plans and calculations for additional comments.
- In the right hand column, please indicate the sheet number and detail or note number on the plan where the corrections are made. Resubmit PDF copies of corrected plans, calculations, and this plan review list with annotation.
- Incorporate all comments as marked on check set of plans, calculations, and these correction sheets.

LOW IMPACT DEVELOPMENT (LID) Requirements

All development must comply with the County of Los Angeles' Title 12, Chapter 12.84 (LID).

LID standards are intended to distribute stormwater and urban runoff across developed sites to help reduce adverse water quality impacts and replenish groundwater supplies. The LID Manual is available at the following link:

<http://dpw.lacounty.gov/idd/web/>

Under the NPDES permit (LACBC Section 106.4.3), priority projects are required to prohibit the discharge of pollutants from property developments. Preventing these pollutants from entering stormwater discharge system will be accomplished by requiring the installation and maintenance of post-construction treatment controls. (Best Management Practices (BMPs))

LID Requirement (Priority and Non-Priority Projects):

Date of Maintenance Agreement:		
Design Storm: (check box)	<input type="checkbox"/> 85th percentile	<input type="checkbox"/> 0.75-inch
SWQDv:	<input type="checkbox"/> ft ³	<input type="checkbox"/> % to retain onsite
LID Solution: (check box)	<input type="checkbox"/> Infiltration	<input type="checkbox"/> Biofiltration

RESIDENTIAL DEVELOPMENTS of 4 units or less:

New development, hillside development, redevelopment, alterations, or additions which alter 50% or more of impervious surfaces, entire site shall meet LID requirements.

Section

Response:

1. Residential development of 4 units or less must implement a minimum of two LID Best Management Practice (BMP) alternatives as indicated in Section 3.2 and Appendix E – Stormwater Quality Control Measure Fact Sheets of the LID Manual. Plans must show complete construction details, materials, manufacturer, model number, dimensions, location, structures, slopes, construction notes, specifications, cross sections, elevations, and setbacks from property lines needed to construct proposed LID BMPs. BMPs should be designed so as not to adversely impact building foundations, pavement, slope stability, or an adjacent property. For hillside properties all catch basins and inlets that discharge into an existing or proposed storm drains must be labeled to discourage illegal dumping of pollutants. Stencils are available at your local Building and Safety office.

- a.
- Permeable Porous Pavement or other impervious surfaces (at least 50% of pavement on lot shall be porous)
- Show detail of placement, base, geotextile, subgrade, and soil preparation per manufacturer's specifications.
 - The required soils report must address percolation and manufacturer's recommendations and guidelines.
 - H-20 loading is required for Fire Department access.
 - A minimum of 30" deep impervious liner or edge restraint is required within 5' of public right of way, property lines, and structures unless otherwise recommended by a soils engineer.

b. Downspout routing

o Cistern/rain barrel

- Show location of cistern/rain barrels. Rain barrels should be designed to store 200 gallons and be located such that roof run-off is equally distributed. Rain gutters & downspouts shall be shown on plans.
- Plans shall show hose bibs or pump systems for discharge and watering of landscaping. (Note: A separate electrical permit is required for pump systems).
- A plumbing permit is required for backflow prevention devices when the discharge system is tied into a landscaping irrigation system served by a potable water source.
- H-20 loading is required for underground cisterns located in an area subject to traffic conditions.
- Plans should include manufacturer specifications and notes for rain barrels. See provided guidelines.

o Rain garden/Stormwater Planter

- Surface area of flow through type planter box shall be designed and sized to treat 200 gallons. Planter must have a 18" minimum top soil layer and 12" minimum gravel layer.
- The infiltration type planter box shall be designed to infiltrate 200 gallons over a 48 hour period.

c. Divert Runoff/Disconnect Impervious Surfaces (Hillsides > 25% slope must comply with this requirement)(NPDES)

- Show driveway, roof, and other impervious surfaces to drain toward pervious landscaped areas. The ratio of impervious to pervious area shall be no less than 2:1. This ratio must be identified on plans for each affected area. A minimum of 90% of the untreated impervious area shall be routed toward vegetated areas or water quality BMPs.

d.

Dry well

- Show details including the following: location, cross section details, liner materials, subbase, and all manufacturer's specifications and/or recommendations from soils engineer.
- The required soils report shall address dry well and manufacturer's specification and requirements.
- The system should be designed to store and infiltrate a minimum of 200 gallons of stormwater within a 48 hour period.
- Provide calculations to determine the infiltration volume for sizing of well and determine time of infiltration to percolate 200 gallons.
- A filter or sediment control is required to filter water entering the dry well.
- Drywells that are deeper than their widest dimension are defined by the EPA as Class V injection wells, and are subject to inventory requirements under the Safe Drinking Water Act and must be registered at the following link with the EPA as injection wells.
<http://www.epa.gov/region09/water/groundwater/injection-wells-register.html>. If this type of dry well is proposed, provide copy of registration.

- e. Landscaping and landscape irrigation
- Show a minimum of two 15 gallon trees to be planted and maintained. Trees shall be located near impervious surfaces (10 foot maximum distance). One of the trees may be on the drought-tolerant plant list as required under the County's Green Building Ordinance (http://planning.lacounty.gov/assets/upl/project/green_drought-tolerant-garden.pdf). In Very High Fire Hazard Severity Zones, applicant should verify compliance with Fire Department's requirements.
 - Install Smart Irrigation Controllers.
- f. Green Roof
- Show area of green roof on site plan.
 - Structural calculations for design of green roof will be required at time of building plan submittal.
 - Fire Department approval will be required as part of building plan check.

NON-RESIDENTIAL DEVELOPMENTS (Commercial or Industrial) must comply with LID as follows:

Section

Response:

2. The following is a list of new development and redevelopment projects/activities that require compliance with LA County's LID ordinance. (See LID manual for additional information)
- All development projects equal to 1 acre or greater of disturbed area and adding more than 10,000 square feet of impervious surface area
 - Residential new or redeveloped projects that creates, adds, or replaces >10,000 square feet of impervious surface area.
 - Industrial parks 10,000 square feet or more of surface area.
 - Commercial malls 10,000 square feet or more surface area.
 - Retail gasoline outlets 5,000 square feet or more of surface area.
 - Restaurants (SIC 5812) 5,000 square feet or more of surface area.
 - Parking lots 5,000 square feet or more of impervious surface area, or with 25 or more parking spaces.
 - Street and road construction of 10,000 square feet or more of impervious surface area.
 - Automotive service facilities with 5,000 square feet or more of surface area.
 - Projects located in or directly adjacent to, or discharging directly to a Significant Ecological Area (SEA), where the development will discharge storm water runoff that is likely to impact a sensitive biological species or habitat; and Create 2,500 square feet or more of impervious surface area.
 - Redevelopment projects identified below*:
 - Land-disturbing activity that results in the creation or addition or replacement of 5,000 square feet or more of impervious surface area.
 - Development which alters less than 50% of impervious surfaces. Only proposed re-development needs to meet NPDES requirements.
 - Development which alters 50% or more of impervious surfaces. Entire site shall meet NPDES requirements.

(707A.3;
R327.7.3)

*Impervious surface replacement, such as the reconstruction of parking lots and roadways which does not disturb additional area and maintains the original grade and alignment, is considered a routine maintenance activity. Redevelopment does not include the repaving of existing roads to maintain original line and grade.

REQUIREMENTS

- a. New Development and Re-Development Projects must control runoff through infiltration, bioretention, and/or rainfall harvest and use. Project must retain onsite the Stormwater Quality Design Volume (SWQDV) as defined by the greater of the following:
 - The 0.75-inch, 24 hour rain event or
 - The 85th percentile, 24-hour rain event, as determined from the Los Angeles County 85th percentile precipitation isohyetal map (www.dpw.lacounty.gov/wrd/hydrologygis).
- b. Bioretention and biofiltration systems shall meet the design specifications provided in Attachment H of LA County's NPDES Permit (available at <http://dpw.lacounty.gov/bsd/publications/index.cfm>).
- c. When evaluating the potential for onsite retention, each projects must consider the maximum potential for evapotranspiration from green roofs and rainfall harvest and reuse.

- d. To demonstrate technical infeasibility, it must be shown that a project site cannot reliably retain 100 percent of the SWQDv onsite. Technical infeasibility may result from the following:
- i. The infiltration rate of saturated in-situ soils less than 0.3 inch per hour.
 - ii. Seasonal high ground water is within 5 to 10 feet of the surface.
 - iii. Locations within 100 feet of a ground water well used for drinking water.
 - iv. Brownfield development sites where infiltration poses a risk of pollutant mobilization.
 - v. Locations with potential geotechnical hazards.
- e. When technical infeasibility has been demonstrated the site must biofiltrate using the following equation for volume required:
- $B_v = 1.5 * [SWQD_v - R_v]$**
- Where: B_v = Biofiltration volume
 $SWQD_v$ = Stormwater runoff as defined in 85 A
 R_v = Volume reliably retained onsite (amount infiltrated)
- *** Show volumes and flow rates on plans as applicable.

Note: For additional alternative compliance measures see Regional Water Quality Control Board Order No. R4-2012-0175 section VI.D.7.c.iii
http://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/index.shtml

- f. Project sites that outlet to natural drainage systems that are subject to hydromodification shall be in compliance with LA County's LID manual, Section 8. (available at <http://dpw.lacounty.gov/idd/web/>).
- g. The plans must show complete construction details, materials, manufacturer, model number, dimensions, location, structures, slopes, construction notes, specifications, cross sections, elevations, GPS x-y coordinates for each BMP, and setbacks from property lines needed to construct proposed LID BMPs. BMPs should be designed as not to adversely impact building foundations, pavement, slope stability, or an adjacent property.
- h. Clearly show driveway/access road drainage and provide BMPs for treatment of driveway flows. Provide elevations, cross sections, or slopes as applicable.
- i. Submit and obtain approval from Environmental Programs Division, Industrial Waste Unit. An annual operating permit may be required. Environmental Programs Division (EPD), Industrial Waste Unit - 900 S. Fremont, Alhambra, Annex Building, 3rd floor, (626) 458-3517. Please contact EPD for required fees and minimum submittal requirements. Please note: prior to obtaining approval from EPD the location and the design flows for all BMPs must be shown on plans and approved by Building and Safety. (This may apply to non-residential projects that propose proprietary filters, drywells, or hydrodynamic separators)
- j. Pre-treatment BMPs are required.

3. Non-Designated Projects.

Section

Response:

Non-residential development (Commercial, Industrial) or a residential development consisting of 5 or more residential units:

- o Development which alters less than 50% of impervious surfaces. Only proposed new impervious areas needs to meet LID requirements.
- o Development which alters 50% or more of impervious surfaces. Entire site shall meet LID requirements.

- a. Projects must comply with the following: 1) the Delta Stormwater Quality Design Volume ($\Delta SWQD_v$), the difference in the volume of runoff between undeveloped (1% impervious surfaces) and post-developed condition using the water quality design storm event shall be infiltrated at the lot level, If $\Delta SWQD_v$ cannot be infiltrated due to geotechnical or technical feasibility as indicated in Section 7 of the County's LID Manual; onsite storage or other water conservation requirements must be implemented.
- b. Provide calculations for sizing of the proposed BMP's. Calculations must consider $\Delta SWQD_v$, percolation rate, and geotechnical considerations.

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Required Infiltration Time (<i>due to vector control</i>)	
<u>BMP Type</u>	<u>Duration</u>
Open above ground (includes planting soil or open gravel pit)	48 hours to drain completely
Underground retention	96 hours to drain completely

Response:

[illegible]

Plan Checker:	0	Email:	0
Phone Number:	-	Date:	3/23/2015